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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,976	11/20/2001	Haviland Wright	DIS-P029	1715

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EXAMINER

HARRINGTON, ALICIA M

ART UNIT PAPER NUMBER

2873

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/989,976		WRIGHT	
	<b>Examiner</b>		<b>Art Unit</b>	
	Alicia M. Harrington		2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 3/13/06; 5/9/06 and 6/9/06.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-34 and 40-51 is/are pending in the application.
- 4a) Of the above claim(s) 2-14, 25-34, 40-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 15-17, 19-23, 43-45 and 48-50 is/are rejected.
- 7) ☒ Claim(s) 18, 24, 46, 47, 51 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0306, 0506</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Information Disclosure Statement***

1. The Examiner has considered the information disclosure statements filed on 3/9/06 and 5/9/06.

***Response to Arguments***

2. Applicant's arguments filed 6/9/06 have been fully considered but they are not persuasive. Applicant argues 615 is a real image on the diffusion screen and thus Popovich fails to provide virtual image. The Examiner must respectfully disagree. Image 615 is projected (re-imaged) to the viewer as a virtual image by a holographic element designed to create a virtual image (see page 26, lines 25-30). Thus, the rejection will be repeated.

***Claim Rejections - 35 USC § 103***

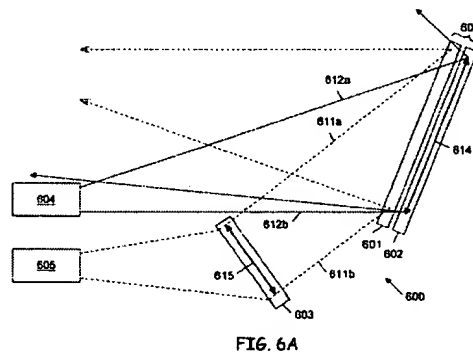
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 15-17, 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Popovich et al. (WO 00/07058).

Popovich discloses (see figure 6A below), as in claims 1, 15, 17 and 43, a display device, comprising: an image-generating arrangement configured to

reproduce images, the images being visible to a viewer when the device is operated in both of two modes, including a first mode wherein the device produces a real image (614) of the image-generating arrangement, and a mode wherein the device produces a virtual image (image at transmissive diffuser is then imaged/transformed via holographic mirror 601 to a virtual image- image not seen in the planes of the mirror-see page 26, lines 25-30 of Popovich ) of the image-generating arrangement.



Popovich discloses, as in claim 19, an image screen (609, 614) upon which the real image of the image-generating arrangement appears when the device is operated in the first mode.

Again, Popovich illustrates in figure 1a, the configuration of the display that shows a real image in a public mode (see page 9). Figure 2a and 2b illustrates the configuration of the display (using a reflective-2a and refractive-2b optic element) for showing a virtual image in an embodiment of the private mode (see page 11). Figure 6a and 6b further illustrate the same display using a holographic display element (also using reflective and refractive elements) where a real image (in the plane of the display) 614 is displayed in public mode and a virtual

image 615(projected toward or in front of the user for example-see page 14) is displayed in private mode that was created from the same image generation source (see figure 6b for illustration) via projection elements 605/603(see page 23). However, Popovich fails to specifically disclose an embodiment where a diffusive screen it placed in the path of the light that forms the virtual image. It would have been obvious to one of ordinary skill in the art at the time the invention was made to remove a diffusive screen (light scattering can create stray light beams that don't impinge upon the reflective mirror/lost beams) from the creation of a virtual image, since it has held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involve only routine skill in the art. IN re Karlson, 136 USPQ 184.

Regarding claim 16 and 20-23, Popovich discloses the claimed invention; except for the limitation of a mode-selection arrangement includes a switch having at least two positions that allows an operator of the device to select the desired image-review mode, as in claim 16. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the optical device with a switch, which is well known and widely used, for the purpose of changing from one desired effect to another. Such motivation would likewise be desired to change from a real image to a virtual image.

Popovich discloses the claimed invention; except for the limitation of an image screen moveable between at least two positions, an active position for use when the first mode is in operation, and an inactive position for use when the first

mode is not in operation, and sensing arrangement as in claims 20-22. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide active and inactive positions as claimed for the purpose of power efficiency and storage.

Popovich discloses the claimed invention; except for the limitation of the image screen is polarized to reject at least a portion of the ambient light present in the device's operating environment, as in claim 23. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the screen of Popovich with a polarized screen to provided better view of image.

5. Claims 43,44,48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al (US 5,757,339).

As to claims 43-44, Williams teaches a HUD where the eyepiece of the user can that displays images directly to the user (one mode) can be converted into a projection unit (second mode) for projecting into a view space (see col. 2,lines 27-67 and col. 4,lines 25-37) and thus the images are visible to the user in either mode. However, Williams fails to specifically disclose the image generator is reflective. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a reflective image generator, since using reflective image generators (reflective LCD) units in HUD is well known, this technology is highly marketable and reflective image generators are known to provide bright quality images.

Williams discloses the claimed invention; except for the limitation of a mode-selection arrangement includes a switch having at least two positions that allows an operator of the device to select the desired image-review mode, as in claim 45. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the optical device with a switch, which is well known and widely used, for the purpose of changing from one desired effect to another. Such motivation would likewise be desired to change from a real image to a virtual image.

Regarding claim 48, the display in the eyepiece.

Popovich discloses the claimed invention; except for the limitation of an image screen moveable between at least two positions, an active position for use when the first mode is in operation, and an inactive position for use when the first mode is not in operation, and sensing arrangement as in claims 49-50. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide active and inactive positions as claimed for the purpose of power efficiency and storage.

***Allowable Subject Matter***

6. Claims 18,24,46,47,51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is an examiner's statement of reasons for allowability: The prior art taken either singularly or in combination fails to anticipate or fairly suggest the

limitations of the independent claim(s), in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in claim(s) 18,47 and 24, wherein the claimed invention comprises proximity sensor (claim 18,47), an image screen having non-unity gain (claim 24), an eyepiece for viewing the virtual image; and a pointing device in relation to the image screen (claim 51) as claimed. The combination of all the claimed features are not anticipated or made obvious by the prior art and all of said features are relied upon for a determination of allowability.


#### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Harrington whose telephone number is 571 272 2330. The examiner can normally be reached on Monday - Thursday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571 272 2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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Art Unit 2873

AMH